PATENT COOPERATION TREA

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark Office, PCT
2011 South Clark Place Room CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 17 January 2001 (17.01.01)	
International application No. PCT/US00/15659	**Applicant's or agent's file reference** P50937
International filing date (day/month/year) 07 June 2000 (07.06.00)	**Priority date** (day/month/year) 07 June 1999 (07.06.99)
Applicant JANSON, Cheryl, Ann et al	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

04 December 2000 (04.12.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Pascal Piriou
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

Form PCT/IB/331 (July 1992)

US0015659

PATENT COOPERATION TREATY

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REC'D 28 JUN 2001
WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P50937	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US00/15659	International filing date *(day/month/year)* 07 JUNE 2000	Priority date *(day/month/year)* 07 JUNE 1999
International Patent Classification (IPC) or national classification and IPC IPC(7): C07K 1/00, 14/00, 17/00 and US Cl.: 530/350		
Applicant SMITHKLINE BEECHEM CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

   I ☒ Basis of the report

   II ☐ Priority

   III ☒ Non-establishment of report with regard to novelty, inventive step or industrial applicability

   IV ☐ Lack of unity of invention

   V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☐ Certain documents cited

   VII ☐ Certain defects in the international application

   VIII ☐ Certain observations on the international application

Date of submission of the demand 08 JANUARY 2001	Date of completion of this report 05 JUNE 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer GINNY PORTNER Telephone No. (703) 308-0196

Form PCT/IPEA/409 (cover sheet) (July 1998) ★

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

[redacted]onal application No.
PCT/US00/15659

I. Basis of the report

1. With regard to the **elements** of the international application:*

[X] the international application as originally filed

[X] the description:
pages 1-48 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the claims:
pages 49-51 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the drawings:
pages 1-192 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

[ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[ ] the language of publication of the international application (under Rule 48.3(b)).

[ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

[ ] contained in the international application in printed form.

[ ] filed together with the international application in computer readable form.

[ ] furnished subsequently to this Authority in written form.

[ ] furnished subsequently to this Authority in computer readable form.

[ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

[ ] The statement that the information recorded in computer readable form is identical to the writen sequence listing has been furnished.

4. [X] The amendments have resulted in the cancellation of:

[X] the description, pages NONE

[X] the claims, Nos. NONE

[X] the drawings, sheets/~~fig~~ NONE

5. [ ] This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

***Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

[redacted]nal application No.
PCT/US00/15659

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been and will not be examined in respect of:

☐ the entire international application.

☒ claims Nos. 3,5,8-11,13-16,18-27

because:

☐ the said international application, or the said claim Nos. _ relate to the following subject matter which does not require international preliminary examination *(specify)*.

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. _ are so unclear that no meaningful opinion could be formed *(specify)*.

☐ the claims, or said claims Nos. _ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. (See Attached) .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims	1-2,4,6-7	YES
	Claims	12,17	NO
Inventive Step (IS)	Claims	none	YES
	Claims	1-2,4,6-7,12,17	NO
Industrial Applicability (IA)	Claims	1-2,4,6-7,12,17	YES
	Claims	none	NO

2. citations and explanations (Rule 70.7)

Claims 12 and 17 lack novelty under PCT Article 33(2) as being anticipated by Heath, RJ et al (03 May 1996).

Heath, RJ et al describe the claimed special technical feature of a molecule that interacts with the active site of FabH, wherein the molecule is an inhibitor of enzymatic activity through interaction with the active site of the enzyme. The molecule was designated an Acyl-ACP, which suppressed FabH activity (see abstract). The reference anticipates the now claimed invention.

Claims 12 and 17 lack novelty under PCT Article 33(2) as being anticipated by Heath, RJ et al (26 January 1996).

Heath, RJ et al describe the claimed special technical feature of a molecule that interacts with the active site of FabH, wherein the molecule is an inhibitor of enzymatic activity through interaction with the active site of the enzyme. The molecule was a long chain acyl-acyl carrier protein, designated an Acyl-ACP, which suppressed FabH activity (see abstract). The reference anticipates the now claimed invention.

Claims 12 and 17 lack novelty under PCT Article 33(2) as being anticipated by Han et al (September 1998).

Han et al describe the claimed special technical feature of a molecule that interacts with the active site of FabH, wherein the molecule is an inhibitor of enzymatic activity through interaction with the active site of the enzyme. The inhibitor was a thiolactomycin molecule. The reference anticipates the now claimed invention.

Claims 1-2 lack an inventive step under PCT Article 33(3) as being obvious over Han et al (September 1998). Han et al teach the characterization of FabH through biochemical isolation and purification by sodium dodecyl sulfate-polyacrylamide gel electrophoresis, wherein FabH was found to be a homodimeric enzyme. The referenced also purified the protein through recombinant expression followed by purification. The reference (Continued on Supplemental Sheet.)

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

III. NON-ESTABLISHMENT OF REPORT:

No international search report has been established for claim numbers 3,5,8-11,13-16,18-27.

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):
describes the considerable efforts that have been made to study the initiation of fatty acid biosynthesis in streptomycetes and the precursors involved (see page 4481, col. 1). The importance of understanding this key component of the biosynthetic pathway of E.coli through biochemical and enzymatic analysis would provide greatly needed insight in pathogen susceptibility to therapeutic inhibitors of disease. It would have been obvious to the person of ordinary skill in the art at the time the invention was made to modify the invention of Han in view of the suggestion and guidance provided, to obtain the crystalline form of FabH because the gene encoding the protein has been cloned and the protein expressed has been purified. With increased concentrations of FabH produced by recombinant host cells, the FabH protein would readily be crystallized and purified to homogeneity for enzymatic and structural studies in order to obtain greater insights to pathogen survival, as well as having reagents at hand that could be readily used to screen for enzyme inhibitors that are specific to that pathogen.

Claims 1, 4 and 6 lack an inventive step under PCT Article 33(3) as being obvious over Heath et al (January 26, 1996). Heath et al teach the characterization of FabH through biochemical isolation and purification by sodium dodecyl sulfate-polyacrylamide gel electrophoresis as well as purified the protein through recombinant expression. The reference describes the considerable efforts that have been made to study the initiation of fatty acid biosynthesis in E.coli and the precursors involved. The importance of understanding this key component of the biosynthetic pathway of E.coli through biochemical and enzymatic analysis would provide greatly needed insight in pathogen susceptibility to therapeutic inhibitors of disease. It would have been obvious to the person of ordinary skill in the art at the time the invention was made to modify the invention of Heath et al in view of the suggestion and guidance provided, to obtain the crystalline form of FabH because the gene encoding the protein has been cloned and the protein expressed has been purified. With increased concentrations of FabH produced by recombinant host cells, the FabH protein would readily be crystallized and purified to homogeneity for enzymatic and structural studies in order to obtain greater insights to pathogen survival, as well as having reagents at hand that could be readily used to screen for enzyme inhibitors that are specific to that pathogen.

Claims 1, 4 and 6 lack an inventive step under PCT Article 33(3) as being obvious over Heath et al (May 03, 1996). Heath et al teach the characterization of FabH purification recombinant expression of the cloned gene fabH. The reference describes the considerable efforts that have been made to study the initiation of fatty acid biosynthesis in E.coli and the precursors involved. The importance of understanding this key component of the biosynthetic pathway of E.coli through biochemical and enzymatic analysis would provide greatly needed insight in pathogen susceptibility to therapeutic inhibitors of disease. It would have been obvious to the person of ordinary skill in the art at the time the invention was made to modify the invention of Heath et al in view of the suggestion and guidance provided, to obtain the crystalline form of FabH because the gene encoding the protein has been cloned and the protein expressed has been purified. With increased concentrations of FabH produced by recombinant host cells, the FabH protein would readily be crystallized and purified to homogeneity for enzymatic and structural studies in order to obtain greater insights to pathogen survival, as well as having reagents at hand that could be readily used to screen for enzyme inhibitors that are specific to that pathogen.

Claims 1-2,4,6-7,12,17 meet the requirement for industrial applicability as defined by PCT Article 33(4).

---------- NEW CITATIONS ----------

NONE